ery, with 60,000 barrels of oil in the works, were valued at $80,000; and the damage to the Donnells' works is estimated at $50,000.

Russell, Kansas, 27th: During thunder-storm a mule and rider were killed about nine miles south of station.

Bryant, Indiana, 18th: Two persons were killed by lightning, and another was seriously injured.

Pottsville, Pennsylvania, 8th: The principal of the high school, at this place, and three boys were severely stunned by lightning while crossing Lawson's Hill.

ELECTRICAL PHENOMENA.

On the summit of Mount Washington, on the 14th, at 8:45 p. m., the anemometer cups were illuminated with electric light. On the 19th, at 10:30 p. m., pointed objects were tipped with electric light.

Pike's Peak, 7th, during a heavy snow storm at 8:30 p. m., the anemometer cups revolved in a circle of light, and other objects were illuminated. The hair and clothing emitted sparks, and a peculiar aching sensation was felt in the fingers.

San Francisco, 15th, telegraph wires charged with atmospheric electricity.

OPTICAL PHENOMENA.

SOLAR HALOS.

Solar halos have been observed in the various districts on the following dates:

New England: 2d, 10th, 23d, 25th, 27th, 28th.
Middle Atlantic states: 1st, 9th, 10th, 17th, 19th, 24th, 27th.
South Atlantic states: 6th, 9th, 17th, 18th, 28th, 29th, 30th.
East Gulf states: 3d, 5th, 6th, 14th, 15th, 16th.
Ohio valley and Tennessee: 5th, 6th, 7th, 10th, 13th, 15th, 16th, 17th, 25th, 26th.
Lower lake region: 2d, 7th, 10th, 11th, 16th to 19th, 23d, 26th, 28th.
Upper lake region: 6th, 7th, 10th, 15th, 16th, 17th.
Upper Mississippi valley: 4th to 7th, 15th, 16th, 30th.
Missouri valley: 1st, 4th, 5th, 17th, 26th, 27th, 28th, 30th.

Solar halos were also reported from the following stations not included in the districts named above:

Punta Rassa, Florida, 6th, 18th.
Moorhead, Minnesota, 27th.
Tobacco Garden, Dakota, 24th.
Yates Centre, Kansas, 4th, 5th, 15th.
Clay Centre, Kansas, 26th.
Creswell, Kansas, 18th.
Salt Lake City, Utah, 4th.
Santa Fé, New Mexico, 2d, 11th, 24th, 29th.
Colfax, Washington territory, 29th.
Sacremento, California, 11th.
San Francisco, California, 1st, 2d.

LUNAR HALOS.

Lunar halos have been observed in the various districts on the following dates:

New England: 2d, 4th, 19th, 22d to 26th, 28th.
Middle Atlantic states: 2d, 4th, 22d, 23d, 26th, 27th.
South Atlantic states: 21st, 24th, 29th, 30th.
East Gulf states: 26th, 27th, 28th, 29th.
West Gulf states: 19th, 24th, 26th to 29th.
Ohio valley and Tennessee: 6th, 7th, 24th, 25th, 26th.
Lower lake region: 2d, 19th, 22d, 25th to 29th.
Upper lake region: 26th, 27th.
Extreme northwest: 24th to 27th, 29th.
Upper Mississippi valley: 21st, 22d, 24th to 27th, 29th, 30th.
Missouri valley: 24th, 25th, 26th, 28th, 30th.
Northern slope: 14th, 19th, 22d, 25th, 26th, 29th.
Northern plateau: 23d to 27th.

Lunar halos were also reported from the following stations not included in the districts named above:

Punta Rassa, Florida, 30th.
Havana, Cuba, 26th, 30th.
Uvalde, Texas, 28th.
Santa Fé, New Mexico, 24th 28th.
West Las Animas, Colorado, 29th.
Salt Lake City, Utah, 24th.
Los Angeles, California 27th.

MIRAGE.

Northport, Michigan, 20th: From 11:00 a. m. to 3:00 p. m., the opposite shore (twelve miles distant) appeared distinctly visible. Objects and localities were discernable and recognized, which could not otherwise have been seen.

Indianola, Texas, 1st to 4th, 23d, 25th, 26th.
Alexandria, Dakota, 21st, 23d.
Genoa, Nebraska, 1st.

MISCELLANEOUS PHENOMENA.

SUNSETS.

The characteristics of the sky, as indicative of fair or foul weather for the succeeding twenty-four hours, have been observed at all Signal Service stations. Reports from one hundred and eighty-five stations show 5,459 observations to have been made, of which fifteen were reported doubtful; of the remainder, 5,444, there were 4,800, or 88.2 per cent., followed by the expected weather.

SUN SPOTS.

The following record of observations has been forwarded by Mr. D. P. Todd, Director of the Lawrence Observatory, Amherst, Massachusetts:

DATE—Sept., 1882.	No. of new		Disappear'd by solar rotation.		Reappear'd by solar rotation.		Total No. visible.		REMARKS.
	Gr'ps	Spots	Gr'ps	Spots	Gr'ps	Spots	Gr'ps	Spots	
2, 2 p. m...	1	15‡	0	0	0	0	5	25‡	
3, 3 p. m...	0	10‡	0	0	0	0	5	35‡	
4, 1 p. m...	0	10‡	1	5	0	0	4	45‡	
5, 11 a. m...	0	0	0	0	0	0	4	45‡	
7, 10 a. m...	0	0	1	10‡	0	0	3	35‡	
8, 10 a. m...	0	0	1	15‡	0	0	2	20‡	
9, 9 a. m...	1	2	0	0	1	2	3	20‡	
10, 3 p. m...	0	0	0	0	0	0	3	20‡	
12, 3 p. m...	1	1	0	10‡	1	1	4	12‡	
14, 8 a. m...	0	13‡	0	5	1	13‡	4	20‡	Two spots quite large.
18, 2 p. m...	1	20‡	.....	.....	.....	.....	3	35‡	Two spots quite large.
19, 9 a. m...	0	0	0	0	0	0	3	35‡	Two spots quite large.
20, 3 p. m...	0	0	0	0	0	0	3	35‡	Two spots quite large.
23, 5 p. m...	1	2	.....	.....	1	2	4	25‡	
24, 9 a. m...	1	1	1	2	1	1	4	25‡	Two spots very large.
28, 5 p. m...	1	15‡	.....	.....	.....	.....	5	25‡	One spot very large.
29, 8 a. m...	0	5	0	0	0	0	5	30‡	One spot very large.
30, 8 a. m...	0	0	0	0	0	0	5	30‡	One spot very large.

‡Approximated. Faculæ were seen at the time of every observation.

Mr. H. D. Gowey, at North Lewisburg, Ohio, reports: Sun-spots were observed on all clear days during the month. They were most numerous at the beginning and close of the month; largest and most active on the 28th; and smallest on the 12th.

Mr. David Trowbridge, at Waterburg, New York, reports: 2d, three groups, six spots; one group has appeared by rotation. 4th, four groups, thirteen spots. 6th, three groups, fifteen spots; one group has gone out since the 4th. 7th, three groups (same as 6th), twelve spots. 8th, two groups, six spots; one group has disappeared by rotation. 9th, three groups, eight spots; one faint spot surrounded with faculæ has just appeared by rotation. 12th, two groups, six spots; all faint. 14th, three groups, five spots; one group has disappeared by rotation. 15th, one group, three spots; one group has disappeared by rotation, and one near the centre has gone out. 16th, one group, three spots; atmosphere hazy. 17th, two groups, nine spots. 19th, two groups, five spots; somewhat cloudy. 24th, three groups, four spots; one group has just appeared by rotation. 25th, four groups, eleven spots; one group has disappeared by rotation, and one has appeared by rotation; faculæ in the west. 26th, four groups, seven spots; somewhat cloudy. 27th, three groups, six spots; faculæ in the west. 30th, four groups, ten spots; one large group; faculæ in the east.

Captain John Carroll, of the s. s. "Hevelius," reports: 5th, in N. 28°, W. 19°, observed a large spot on sun's disk, and 6th, in N. 31°, W. 17°, the same spot was observed.